

author advertise himself as the *author* of "Electric Lighting," which is the title—if we are not mistaken—of his *translation* of Fontaine's well-known work?

SILVANUS P. THOMPSON

THE DOLOMITE REEFS OF THE SOUTHERN TYROL AND VENETIA

Die Dolomit-Riffe von Süd-Tirol und Venetien. Beiträge zur Bildungsgeschichte der Alpen. Von Edmund Mojsisovics von Mojsvár. Pp. 552, with 30 Photographic Plates, 110 Woodcuts, and an Atlas in 6 sheets. (Vienna: Holder, 1879.)

THERE are few districts in Europe which have attracted so much attention from geologists as that which is described in the splendid monograph now lying before us. Whether we consider the richness and variety of the palæontological treasures yielded by the world-famed deposits of St. Cassian, the wonderfully-dissected volcanic centres of Monzoni and Predazzo, or the remarkable illustrations of the action of denuding forces still at work in the Alpine regions, as illustrated by the picturesque ruin-like masses of the dolomitic limestones and the singular earth-pillars of Botzen, the area must be admitted to be worthy of the celebrity which it enjoys among the cultivators of all branches of geological science.

The author of the present work possesses a remarkable combination of the qualifications necessary for the successful accomplishment of the task he has set himself. A daring Alpine climber, he has explored the most inaccessible recesses of the district during the summer months, while his winters have been devoted to the study of the grand assemblage of fossil-forms which he has brought together with such untiring industry. The manner in which Dr. Mojsisovics is performing this task of describing the enormous series of fossils of the Alpine Trias—an assemblage of forms possessing so many features of interest on account of the remarkable admixture of Palæozoic and Mesozoic types which it presents—is familiar to all palæontologists. He has shown that at Hallstadt and St. Cassian respectively we have evidences of the existence of two distinct life-provinces in the Triassic seas, and his monographs on the cephalopods of these two life-provinces, the first instalments of which have already appeared, have excited the greatest interest among naturalists, who were scarcely prepared even by the writings of von Hauer and other illustrators of the fauna of the Alpine Trias, for the new and remarkable varieties of the Ammonite type, now brought to light by the author of this work. The current number of the *Verhandlungen der k. k. geologischen Reichsanstalt*, of Vienna, contains an interesting summary of this new work, and shows that no less than thirty-two Ammonite genera have up to the present time been recognised in the Alpine Trias, of which thirteen are peculiar to the northern life-province, five are restricted to the southern life-province, while fourteen are common to both. Although Dr. Mojsisovics's work has, up to the present time, been confined to the Cephalopoda, yet we anticipate results of scarcely less interest when he arrives at the examination of the Gasteropoda and the other classes of fossils obtained from the Alpine Trias.

The work before us is in great part the result of the investigation of the Austrian Geological Survey, carried on under the direction of Franz von Hauer, and much of the detailed examination of certain of the districts described was accomplished by two of the author's former colleagues Dr. Hoernes and Dr. Doelter; the account of the volcanic and granitic rocks is indeed almost entirely supplied by the latter geologist, who is so well known for his skill in micropetrographic researches. The most important part of the work, however, is that which is devoted to the description of the several Mesozoic formations of this Alpine area, and to a discussion of the important facts concerning the former physical geography of the region, and the distribution of life-forms within it—questions which the author is so well qualified by his long study of the subject to treat of.

As a consequence of the representations made to the Academy of Sciences of Vienna by von Hauer, Suess, and Hochstetter, a special grant of money was made to aid the author in the publication of this valuable monograph, and no expense has been spared to make both the book itself and the atlas which accompanies it, of the greatest possible value. In these respects the work resembles the publications of the American Geological Surveys much more than those of our own country.

The atlas contains six sheets, comprising an area of about 3,000 square miles, and is constructed on a scale of $\frac{1}{75000}$, or about $\frac{1}{8}$ of an inch to an English mile. The foundation of the map is, for the southern or Italian part, the old general map of the Austro-Hungarian Empire on the same scale, and for the Tyrolese area the new military map of Austria on a scale of $\frac{1}{25000}$, which has been reduced by photography. The geological colouring is admirably printed, and although between forty and fifty different tints have been employed to indicate the numerous subdivisions adopted by the author, this is accomplished without creating confusion, or obscuring the topographical details of the map. The district comprised in it includes the country lying between the Adige and the Piave, from Toblach, on the north, to Feltre, on the south, the larger portion of which is included in the Austrian Tyrol, but a considerable area in the south-west now belongs to the Italian monarchy.

The memoir itself is illustrated by thirty reproductions of photographs taken either by the author himself or by Egger of Linz, the points of view in the latter cases having been chosen by Dr. Hoernes. These views give an excellent idea of the remarkable natural features presented by this very interesting district, the now famous "Dolomite Mountains." In addition to these views and the very numerous woodcut sections, there is also a series of maps illustrating the areas of the old coral reefs and the lines of disturbance traversing the district.

The first or introductory part of the memoir, consisting of four chapters, gives a general sketch of the geology of the district and of the physical features of the Southern Tyrol. The second part (Chapters V.–XV.) is devoted to a detailed description of the geological structure of the several districts, while the third and concluding part (Chapters XVI. and XVII.) deal with theoretical questions of great interest to geologists at the present time, namely, the reef-theory of von Richthofen and the origin and mode of formation of mountain chains. We regret

that the space at our disposal will not permit of our following the author in these interesting discussions, and we can only, in conclusion, heartily recommend the work to the traveller as being admirably adapted to guide him in investigating the geology of a district of extreme interest and great complexity, and to the student at home as containing numerous facts and suggestions worthy of the most thoughtful consideration.

J. W. J.

HEALTH PRIMERS

Health Primers. Edited by J. Langdon Down, M.D., F.R.C.P., Henry Power, M.B., F.R.C.S., J. Mortimer-Granville, M.D., John Tweedy, F.R.C.S. (London: Hardwicke and Bogue.)

THE proverb that a little knowledge is a dangerous thing is especially true in regard to matters connected with health, and it might therefore be supposed that the issue of a series of health primers was a thing to be deprecated, as likely to do harm. But a little reflection will show that this series is intended, not to impart a little knowledge, but to replace the knowledge, not merely little, but confused and inaccurate, which every man supposes himself to possess, by something more definite and exact. Every one fancies that he knows the appearances of health and disease, and that he is able to decide upon the condition of those whom he daily meets. Every man supposes himself able to pronounce that such and such a house cannot be healthy, and believes that he is quite capable of judging for himself how much exercise he ought to take, whether he should or should not use a cold bath in the morning, and what is the proper allowance of beer, wine, or spirits, either for himself or for his neighbours. Now, despite the confidence with which most men will pronounce an opinion on all these subjects, the data on which they would found that opinion would really be very slight, and their knowledge of the subject probably very imperfect and inaccurate, and, consequently, the conclusions at which they would arrive would most likely be erroneous. It is just on such subjects as those we have mentioned that the books of this series afford accurate information. The first of them, "On Premature Death, its Promotion and Prevention," is of a less popular character than the others, and has, we think, suffered in consequence of its author not having seen the contents of the other primers. While the material it contains is very valuable, it deals, we think, too much with statistics and too little with the causes of premature death which are under the control of the individual, although occasionally, however, it gives these also, as at p. 46, where ventilation in a hospital is said to have put a stop to the convulsions from which the children died in great numbers, and reduced the mortality to $\frac{1}{8}$ of its previous amount. But on the other hand, while we learn that 6 per cent. of the total mortality from all causes is due to diseases of the heart, the writer says nothing of the dangers incurred in running after an omnibus or in trying to catch a train.

The primer on "Personal Appearance in Health and Disease" includes the changes which the body may undergo in the form and size of its bony framework, fatty layer, and internal organs, as well as external colour. These are given shortly and well, though the alterations

produced artificially by tight-lacing and high-heeled and tight boots might have been still more strongly insisted upon and emphasised by woodcuts showing their results.

"The House and its Surroundings" is clearly written, and contains a great deal of very useful information. By its aid the householder should be able to know where to look for defects in drainage, ventilation, water supply, &c., and thus to avoid many sources of disease, although we think that the dangers of arsenical wall-papers ought perhaps to have been more strongly insisted upon.

"Baths and Bathing" discusses the physiological action, varieties, and uses of baths and bathing localities, both at home and abroad. It is written in a very readable style, and contains both advice as to the use of baths and cautions in regard to their abuse. The author warns against the too heroic use of a morning tub, but forgets to state how very much the chilliness which it brings on in persons of languid circulation may be prevented by using a bath sheet instead of a towel, so that the whole body shall be covered during drying, and not chilled by the exposure of the wet skin to the cold air.

"Exercise and Training" gives a general account of the changes produced in the body by muscular exertion, of the food required, the general régime to be pursued, and the dangers to be avoided. It is evidently written by one who is familiar with the subject of which he is treating.

"Alcohol, its Use and Abuse," deals with a very difficult subject, and does it well. The author is not prejudiced either for or against alcohol, and maintains that because ninety-nine persons out of a hundred misuse it, it is none the less true that it has a right use, this use being sometimes to check the current of thought and care, as well as to stimulate digestion and circulation, although in perfect health its use is unnecessary.

The purpose which these primers are intended to serve is a very important one, and we think that they are well calculated to serve their purpose. We have pointed out one or two things in which we think they might be improved in future editions, but on the whole they are well and carefully done, giving accurate information in a condensed yet popular form.

T. L. B.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

The Mechanical Theory of Earth-Heat

NOTICING the assertion made in NATURE, vol. xx. p. 22, in reference to Prof. Church's article in *Silliman's Journal* on the Comstock Lode, that "the rock in the lower levels seems to have a pretty uniform temperature of 130° F.," and remembering what Prof. G. F. Barker, of the University of Pennsylvania, told me, that on a recent visit to those mines he found that there was no uniform temperature, but on the contrary, the most remarkable differences, some of the higher levels being much hotter than some of the lower levels—so that he came to two conclusions:—(1) That the heat was a hot water heat, and (2) that the hot waters were heated mechanically by those continuous movements of the country, so plainly shown both in the mines and at the surface;—it occurs to me to ask the following question:—